

REMARKS

Claims 1, 4-8, 11-13 and 15-19 are pending in the subject patent application. Claims 1 and 4-6 have been amended. Claims 2, 3, 9 and 10 have been canceled. Claim 14 was previously withdrawn in a paper filed on September 4, 2004, in response to an August 23, 2004 Restriction Requirement, but Applicant reserves the right to file it and other related claims in a divisional or continuing patent application. Finally, new Claims 15-19 have been added. Applicant respectfully requests consideration of the claims in view of the amendments made herein and the remarks provided below.

In the November 3, 2004 Office Action, Claims 1 and 6-8 were rejected under 35 U.S.C. § 102(e) for allegedly being anticipated by U.S. Patent No. 6,317,589 to Nash (hereinafter referred to as “Nash”). Claim 2 was rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of U.S. Patent No. 4,652,775 to Daudelin (hereinafter referred to as “Daudelin”). Claims 9 and 10 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of U.S. Patent No. 3,800,228 to Acker (hereinafter referred to as “Acker”). Claims 3-5 were rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of Daudelin, and further in view of Acker. Claim 11 was rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of U.S. Patent No. 5,835,850 to Kumar (hereinafter referred to as “Kumar”). Claim 12 was rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of U.S. Patent No. 6,317,589 to Hislop (hereinafter referred to as “Hislop”). Finally, Claim 13 was rejected under 35 U.S.C. § 103(a) for allegedly being

obvious over Nash in view of Hislop, and further in view of U.S. Patent No. 5,734,683 to Hulkko et al. (hereinafter referred to as "Hulkko et al.")).

Applicant respectfully requests reconsideration of the claims in view of the above amendments and the comments below.

Claim Rejections – 35 U.S.C. § 102(e), Claims 1 and 6-8

In the November 3, 2004 Office Action, Claims 1 and 6-8 were rejected for allegedly being anticipated by Nash. For the following reasons Applicant disagrees.

Nash discloses a quadrature receiver having a gain compensation loop and a phase correction loop. The gain compensation loop includes a signal strength comparator having in-phase and quadrature signals fed to respective inputs of the signal strength comparator. The signal strength comparator outputs a signal which represents the difference in strength between the in-phase and quadrature signals. The phase correction loop 316 includes a phase detector 320, which is configured to receive I and Q signals from mixers 106 and 308 and generate an output which is proportional to a deviation from ninety degrees in the phase difference between the I and Q signals. The output of the phase detector 320 is input to an optional phase loop filter 322, an output of which is forwarded to an integrator 324. The integrator 324 integrates the phase detector output and generates a phase correction voltage which may be applied to a phase shifter 314. The phase correction loop 316 adjusts a voltage control to the phase shifter 314 until the phase difference between the I and Q channels is exactly ninety degrees.

By contrast, independent Claim 1 of the present invention claims a method of receiving a communications signal including “deriving two reference signals from a signal clock signal *using an adjustable dual delay line*,” and “using [an] error signal to adjust *said dual delay line* in order to alter a relative delay between the two reference signals.” Similarly, independent Claim 6 claims a receiver for receiving a communications signal comprising “an adjustable phase shift network having *a dual delay line* for deriving two reference signals from [a] local oscillator,” wherein *said dual delay line of said adjustable phase shift network* is operable to respond to said error signal and adjust a relative delay between the two reference signals.”

Nash does not teach or suggest using a “delay line”, let alone a “*dual delay line*” to generate two reference signals. For at least these reasons, Nash does not anticipate independent Claims 1 and 6 of the present application.

Claims 7 and 8 both depend from independent Claim 6. Accordingly, the derive patentability for depending on what appears to be an allowable base claim.

In light of the foregoing, Applicant believes that the § 102 rejections of Claims 1 and 6-8 cannot be properly maintained. Applicant requests, therefore, that the rejections be withdrawn.

Claim Rejections – 35 U.S.C. § 103(a), Claim 2

In the Office Action, Claim 2 was rejected for allegedly being obvious over Nash in view of Daudelin. Claim 2 has been cancelled, so this rejection is technically moot. Although technically moot, Applicant would like to point out that one of ordinary skill in

the art would not have found it obvious to employ a “dual delay line,” as independent Claim 1 does. Nash only shows a voltage controlled phase shifter, and there is no suggestion or motivation in either Nash or in Daudelin that a “dual delay line” could be used in a quadrature receiver.

Claim Rejections – 35 U.S.C. § 103(a), Claims 9 and 10

In the Office Action, Claims 9 and 10 were rejected for allegedly being obvious over Nash in view of Acker. Claims 9 and 10 have been cancelled, so these rejections are technically moot. Although technically moot, Applicant would like to point out that one of ordinary skill in the art would not have found it obvious to employ “at least one delay line” or “at least two delay lines”, as dependent Claims 9 and 10 originally recited, or a “dual delay line,” as Claim 6 now recites.

First, Acker is non-analogous art, and therefore cannot be properly used in an attempt to modify Nash. Section 2141.01(a) of the M.P.E.P. directs that “[i]n order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” (quoting *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992)). Here, Acker, which is in the field of modems is not within the field of Applicant’s endeavor. Further, the problem addressed in Acker, which was of phase jitter in a modem, cannot be properly considered to be reasonably pertinent to the problems the inventors of the present application were

concerned with. Accordingly, the rejections of now cancelled dependent Claims 9 and 10 were improper in the first place.

Moreover, there is absolutely no suggestion in either Nash or Acker that the demodulated data signal delay lines 1014 and 1015 might possibly be used to form a delay line or a “dual delay line,” (as now recited in independent Claim 6) for deriving “reference signals,” or could be configured to “respond to [an] error signal and adjust a relative delay between the two reference signal,” Section 2143.01 directs that:

“Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.” Here, there is no teaching, suggestion or motivation to modify the phase adjusting element in Nash so that it could be “at least one delay line” (as dependent Claim 9 originally recited), or that it could be “at least two delay lines” (as dependent Claim 10 originally recited). Further, without the benefit of some legitimate prior art reference, it cannot be said that those of ordinary skill in the art would have found it obvious to use a “dual delay line” in a quadrature receiver in the manner that independent Claim 6 now currently recites.

Finally, even if there were some teaching, suggestion or motivation to modify Nash by Acker, such a modification would not result in a “dual delay line,” as independent Claim 6 now recites. In other words, such a proposed modification would not succeed in a quadrature receiver having a “dual delay line”. Section 2143.02 of the

M.P.E.P. directs that absent a reasonable expectation of success, it is improper to maintain an obviousness rejection of a claim.

Claim Rejections – 35 U.S.C. § 103(a), Claims 3-5

In the Office Action, Claims 3-5 were rejected for allegedly being obvious over Nash in view of Daudelin, and further in view of Acker. Claim 3 has been cancelled in this Amendment, so the rejection of it is technically moot. Although technically moot, as explained above in connection with the rejections of Claims 9 and 10, Acker is non-analogous art, and none of the cited references provide any teaching, suggestion or motivation to combine or modify with Acker. Accordingly, the rejection was improper in the first place. Nevertheless, independent Claim 1 includes a “dual delay line,” which is not taught or suggested by Nash in view of Daudelin, and further in view of Acker.

With respect to dependent Claims 4 and 5, these two claims derive patentability for depending from an allowable base claim, i.e., Claim 1. Even though they do, there are other reasons as to why Nash in view of Daudelin, and further in view of Acker does not render these claims obvious.

Claim 4 recites that the “dual delay line is adjusted at the time of manufacture.” In the Office Action, only a conclusory statement is provided that the delay line in Acker might be adjusted at the time of manufacture. This is mere speculation, and cannot properly form the basis of an obviousness rejection. Even if one of ordinary skill in the art would have considered Acker to teach or suggest that a delay adjustment could be made at the time of manufacture, the rejection is still improper since Acker is non-

analogous art, provides no suggestion or motivation to combine with either Nash or Daudelin, and a reasonable expectation of successfully forming a “dual delay line” by combining or modifying the references is absent. (See explanation above regarding the obviousness rejections of dependent Claims 9 and 10, which apply similarly here as well.)

Claim 5 recites that the dual delay line is “automatically adjusted during operation”. In the Office Action, it is asserted (even though Acker does not so state) that it would have been obvious to one of ordinary skill in the art that the delay lines in Acker would be automatically adjusted during operation, “because some environments have large phase variations”. This is purely speculative. In fact, the figures in Acker (e.g. FIG. 10) and accompanying description indicate to the contrary. Specifically, as described in col. 10, lines 46-47 the delay lines have a preset delay that ensures that delays to the data samples have the same delay as the phase correction signals generated in the lower half of the drawing. Accordingly, not only does dependent Claim 5 derive patentability for depending from an allowable base claim, the prior art cited to support the obviousness rejection actually teaches away from any suggestion that the delays of the delay lines might be “automatically adjusted during operation,” as dependent Claim 5 recites.

Claim Rejections – 35 U.S.C. § 103(a), Claim 11

In the Office Action, Claim 11 was rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of Kumar. For the following reasons,

Applicant respectfully disagrees. Claim 11 depends from independent Claim 6. Accordingly, it derives patentability from what appears to be an allowable base claim. (See amendments to Claim 6 and explanation as to why it is patentable over the cited prior art above.)

Claim Rejections – 35 U.S.C. § 103(a), Claim 12

In the Office Action, Claim 12 was rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of Hislop. For the following reasons, Applicant respectfully disagrees.

First, Claim 12 depends from independent Claim 6. Accordingly, it derives patentability from what appears to be an allowable base claim. (See amendments to Claim 6 and explanation as to why it is patentable over the cited prior art above.)

Additionally, despite what is asserted in the Office Action, Hislop does not disclose “switch-mode mixers”. The “switching mixer” in Hislop operates as a switch to allow a local oscillator to be used as a transmitter oscillator. In this manner the local oscillator is able to perform multiple functions. By contrast, the switching function of the “switch-mode mixers” recited in Claim 12 is actually what performs the “frequency downconversion”. The switching action of the “switching mixer” in Hislop is not involved in frequency downconversion. It merely allows the local oscillator to be used as a transmitter oscillator.

Claim Rejections – 35 U.S.C. § 103(a), Claim 13

In the Office Action, Claim 13 was rejected under 35 U.S.C. § 103(a) for allegedly being obvious over Nash in view of Hislop, and further in view of Hulkko et al. For the following reasons, Applicant respectfully disagrees.

Claim 13 depends from dependent Claim 12, and therefore is allowable for the same reasons dependent Claim 12 is allowable. It is also allowable for all of the reasons independent Claim 6 is allowable, since Claim 12 depends from independent Claim 6. Accordingly, it derives patentability from what appears to be allowable base claims. (See remarks as to why Claim 12 is allowable over the cited prior art. Also see amendments to Claim 6 and explanation as to why it is patentable over the cited prior art above.)

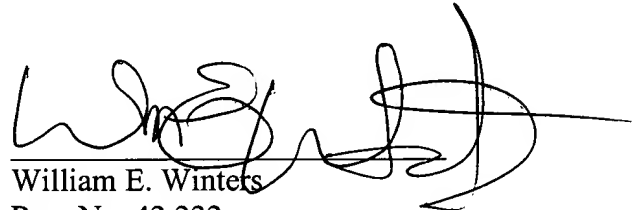
CONCLUSION

For at least the foregoing reasons, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner has any further questions or comments concerning the amendments made herein, he is encouraged to telephone the undersigned at 408-282-1857.

Respectfully submitted,

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